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Supramolecular Structures Formed by Calix[8]arene Derivatives

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Abstract

(Equation presented) Octamethoxy calix[8]arenes substituted in the para position by amide, urea, and imide functions were synthesized from the octamethyl ether of tert-butylcalix[8]arene by ipso nitration, reduction, and acylation. Scanning force microscopy of spin coated samples on graphite suggests that these derivatives self-organize into tubular nanorods via hydrogen bonds between p-amide functions. A single-crystal X-ray structure reveals a centrosymmetric conformation for the octanitro derivative.

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